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PATENT APPLICATIONATTORNEY DOCKET NO. 200312050-1**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor(s): Jan Klier

Application No.: 10/723,037

Filing Date: 11-26-2003

Confirmation No.: 7798

Examiner: Jinhee J. Lee

Group Art Unit: 2174

Title: Drive Controller User Interface

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PO Box 1450
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TRANSMITTAL OF APPEAL BRIEFTransmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on August 8, 2007.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.138(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.138 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month
\$120

☐ 2nd Month
\$450

☐ 3rd Month
\$1020

☐ 4th Month
\$1590

☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of \$ 500 . At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

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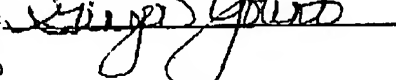
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Rev 10/06a (Ap/Brief)

Respectfully submitted,

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By 

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Applicant:	Jan Klier	§	Art Unit:	2174
Serial No.:	10/723,037	§		
Filed:	November 26, 2003	§	Examiner:	Jinhee J. Lee
For:	Drive Controller User Interface	§	Atty. Dkt. No.:	200312050-1 (HPC.0397US)

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Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

Sir:

The final rejection of claims 1-15, 17, 18, and 20-25 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, L.P.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1-15, 17, 18, and 20-25 have been finally rejected and are the subject of this appeal. Claims 16 and 19 have been cancelled.

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IV. STATUS OF AMENDMENTS

No amendment after final rejection has been submitted.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Independent claim 1 recites an automated storage system (Fig. 1:100) comprising:

a data access drive (Fig. 1:130) operable to read and write computer-readable data on storage media (Spec., ¶ [0015]);

a drive controller (Fig. 2:200) provided at the data access drive (Spec., ¶¶ [0020], [0024]);

computer-readable program code provided in computer-readable storage at the data access drive, the computer-readable program code (Fig. 2:205, 206) for generating drive information and user interface rendering data (Spec., ¶¶ [0024]-[0028]); and

a user interface module (Fig. 2:220) outputting the drive information via a user interface (Fig. 3:300) in accordance with the user interface rendering data (Spec., ¶¶ [0031]-[0034]).

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Independent claim 11 recites a method executed by a processor (Fig. 2:201), comprising:

receiving drive information and graphical user interface rendering data generated by a drive controller (Fig. 2:200) at a data access drive (Fig. 1:130) of a storage system (Fig. 1:100; Spec., ¶¶ [0021], [0024]-[0025]);

outputting the drive information in a graphical user interface (Fig. 3:300) in accordance with the graphical user interface rendering data (Spec., ¶¶ [0021], [0025], [0033]-[0044]); and

receiving an indication of activation of a button (Fig. 3:395) in the graphical user interface, wherein activation of the button is a request for the drive information, and wherein receiving the drive information and graphical user interface rendering data is in response to the indication of activation of the button (Spec., ¶¶ [0028], [0031], [0033]-[0036], [0044]).

Independent claim 18 recites in an automated storage system (Fig. 1:100) having a graphical user interface (Fig. 3:300) including a display (Fig. 2:240) and a user interface selection device (Fig. 2:250, 255), a method of providing and selecting from the display comprising:

receiving activation of a button (Fig. 3:395) in the graphical user interface (Fig. 3:300), wherein activation of the button is a request for drive information (Fig. 3:393) of a data access device (Fig. 1:130) in the automated storage system (Spec., ¶¶ [0021], [0028], [0044]); and

sending an indication regarding the activation of the button to a drive controller (Fig. 2:200) at the data access drive (Spec., [0031], [0035], [0044]);

responsive to the indication regarding the activation of the button, receiving drive information and graphical user interface rendering data from the drive controller (Spec., ¶¶ [0025], [0028], [0044]); and

displaying the drive information (Fig. 3:393) in an application window (Fig. 3:310) in the graphical user interface in accordance with the graphical user interface rendering data (Spec., ¶¶ [0038], [0042]-[0044]).

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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. Claims 11-15, 17, 18, 20, 21, and 25 Rejected Under 35 U.S.C. § 112, ¶ 1.**
- B. Claims 11-15, 17, 18, 20, 24, and 25 Rejected Under 35 U.S.C. § 112, ¶ 2.**
- C. Claims 1-10 Rejected Under 35 U.S.C. § 102 Over U.S. Patent Application Publication No. 2002/0124124 (Matsumoto).**
- D. Claims 11, 12, 14, 15, 17, 18, 20, and 25 Rejected Under 35 U.S.C. § 102 Over U.S. Patent Application Publication No. 2003/0169297 (Lay).**
- E. Claim 13 Rejected Under 35 U.S.C. § 103 Over Lay in View of Matsumoto.**
- F. Claims 21 and 24 Rejected Under 35 U.S.C. § 103 Over Matsumoto in View of Lay.**
- G. Claims 22 and 23 Rejected Under 35 U.S.C. § 103 Over Matsumoto in View of JP 2002-149315 (Seki).**

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.R. § 41.37(c)(1)(vii).

- A. Claims 11-15, 17, 18, 20, 21, and 25 Rejected Under 35 U.S.C. § 112, ¶ 1.**

1. Claims 11-15 and 25.

Independent claim 11 was rejected under § 112, ¶ 1 as failing to comply with the written description requirement, in view of the following clause of claim 11: "receiving an indication of activation of a button in the graphical user interface, wherein activation of the button is a request for the drive information, and wherein receiving the drive information and graphical user interface rendering data is in response to the indication of activation of the button." The Examiner argued that the clause that was added in the Amendment dated March 1, 2007 constitutes "new matter not previously disclosed." 5/16/2007 Office Action at 5.

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Activation of the "Status" button 395 is a request for status information (drive information 393) as indicated in ¶ [0044]. Also, selection of the "Status" button 395 causes drive information to be displayed. The Specification teaches that this display involves the drive controller 200 providing the drive information and the rendering data to output the drive information. *See, e.g.*, Specification ¶¶ [0021], [0025], [0028], [0033].

In view of the foregoing, it is clear that the "receiving an indication of activation of a button" clause of claim 11 is adequately supported by the Specification, and thus the written description requirement of § 112, ¶ 1 is satisfied.

Therefore, reversal of the § 112, ¶ 1 rejection of the above claims is respectfully requested.

2. Claim 17.

Claim 17 depends from claim 11, and the Examiner further rejected claim 17 based on the following language of claim 17: "receiving a second indication of activation of the button in the graphical user interface." The Examiner asserted that this clause constitutes new subject matter that is not supported by the Specification.

Appellant respectfully disagrees. As noted above, the "button" is supported at least by the "Status" button 395. Also, since ¶ [0044] of the Specification notes that the Status button 395 when selected causes the display of the "current" status (drive information 393) of the data access drives, then a second indication of activation of the button in the graphical user interface would cause updated drive information to be output. A discussion of the update of the drive information is provided in ¶¶ [0047]-[0048].

In view of the foregoing, claim 17 is clearly supported by the Specification, and therefore, the written description requirement of § 112, ¶ 1 is satisfied.

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Appellant respectfully disagrees with this assessment, as this added subject matter of claim 11 is clearly supported and described in the Specification. The “graphical user interface” is depicted as 300 in Fig. 3. The “button” is supported at least by the “Status” button 395 in Fig. 3. As described in ¶ [0044] of the Specification, the graphical user interface 300 includes one or more function buttons that can be selected by a user “to perform various functions for retrieving drive information for the data access drive(s)” Paragraph [0044] also notes that in the Fig. 3 example, “the user has selected, using pointer 305, status button 395 to display the current status of the data access drives (e.g., drive information 393).” Paragraph [0028] of the Specification also refers to the “Status” button 395 that is associated with program code for retrieving the drive status (drive information 393 as noted in ¶ [0044] of the Specification) from the drive state machine 205. Paragraph [0031] of the Specification indicates that the system controller 210 is implemented to provide the user interface rendering generated at the drive controller 200 to the user interface module 220, and “to provide input (e.g., control instructions) from the user interface module 220 to the drive controller 200.” The “[g]raphical user interface 300 is associated with an interface application (e.g., state machine 205 and render engine 206 [part of the drive controller 200] in Fig. 2).” Specification, ¶ [0035].

Thus, the Specification makes it very clear that a control button, such as the “Status” button 395, can be selected (which supports “activation of a button” in claim 11). Moreover, the Specification in ¶ [0031] clearly indicates that input in the form of control instructions can be provided from the user interface module 220 to the drive controller 200. As noted in ¶ [0044], such input can be performed by selecting function buttons, including the “Status” button 395. The input provided to the drive controller 200 is one form of an indication of activation of a button in the graphical user interface.

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Reversal of the § 112, ¶ 1 rejection of the above claim is respectfully requested.

3. Claims 18 and 20.

Independent claim 18 was rejected as not satisfying § 112, ¶ 1, because of the addition of the following clauses:

receiving activation of a button in the graphical user interface, wherein activation of the button is a request for drive information of a data access device in the automated storage system; and

sending an indication regarding the activation of the button to a drive controller at the data access drive;

The receiving of activation of a button in the graphical user interface is supported by at least the following: selection of the "Status" button 395 in the graphical user interface 300, as discussed in detail in connection with claim 11 above. Therefore, the "receiving activation of a button" clause of claim 18 is clearly satisfied.

With respect to the clause of "sending an indication regarding the activation of the button to a drive controller at the data access drive," the Specification notes that the user interface module 220 can provide an input to the drive controller 200. Specification, ¶ [0031]. The user interface module 220 has a display 240, a keyboard 250, a mouse 255 (¶ [0032]), where the display 240 can display a graphical user interface 300 as depicted in Fig. 3 of the Specification. Selection of the "Status" button 395 in the graphical user interface 300 causes drive information to be displayed. Specification, ¶ [0044]. The "graphical user interface 300 is associated with an interface application (e.g., state machine 205 and render engine 206 [part of the drive controller 200] in Fig. 2)." *Id.*, ¶ [0035]. Thus, it is clear that the input that is provided from the user interface module 220 to the drive controller 200 provides support for the "indication" recited in the "sending" task of claim 18.

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Appellant respectfully submits that the claim language is clear. Claim 11 recites "receiving an indication of activation of a button in the graphical user interface." The fact that the drive information and graphical user interface rendering data is in response to the indication of activation of the button is consistent with the above clause of claim 11. When a button is activated in a graphical user interface, that activation is normally communicated to a system with some type of an indication. Further tasks are then performed in response to the indication, which is an indication of the activation of the button.

In view of the foregoing, Appellant respectfully submits that there is nothing unclear about claim 11.

Therefore, reversal of the final rejection of the above claims is respectfully requested.

2. Claims 18 and 20.

Although claims 18 and 20 were listed as claims rejected under § 112, ¶ 2, in the introductory sentence in section 4 of the 5/16/2007 Office Action, the Examiner did not provide any explanation of why claims 18 and 20 are rejected as being indefinite. Therefore, the Examiner has failed to make out a proper rejection based on § 112, ¶ 2 of claims 18 and 20.

Therefore, reversal of the § 112, ¶ 2 rejection of the above claims is respectfully requested.

3. Claim 24.

Claim 24 was rejected under § 112, ¶ 2 based on the presence of "a graphical user interface" in line 2. The Examiner asked whether this "graphical user interface" is different from "a graphical user interface" in lines 1-2.

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Appellant respectfully notes that the Examiner has misread claim 24. Line 1 of claim 24 recites "a graphical user interface." However, lines 2-3 of claim 24 recite "a graphical user interface *rendering data*," which is different from the "graphical user interface" introduced earlier.

Therefore, there is no confusion in the language of claim 24.

Reversal of the § 112, ¶ 2 rejection of claim 24 is respectfully requested.

C. Claims 1-10 Rejected Under 35 U.S.C. § 102 Over U.S. Patent Application Publication No. 2002/0124124 (Matsumoto).

1. Claims 1-3, 5-7, 9, and 10.

Independent claim 1 was rejected as being anticipated by Matsumoto. Appellant respectfully disagrees with the anticipation rejection, particular since Matsumoto fails to disclose "each and every element as set forth in the claim." See *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051 (Fed. Cir. 1987).

As noted by the Examiner, Matsumoto discloses a disk array 5000 in Fig. 2. The disk array 5000 includes controller A and controller B. The Examiner cited Fig. 2 of Matsumoto as disclosing "the computer-readable program code for generating drive information and *user interface rendering data*," as recited in claim 1. 5/16/2007 Office Action at 4. The Examiner did not explain what in Fig. 2 of Matsumoto constitutes the "user interface rendering data" of claim 1. There does not appear to be any element in the disk array 5000 of Fig. 2 that generates user interface rendering data.

Note that the user interface rendering data is also recited in the last clause of claim 1, which provides: "a user interface module outputting the drive information via a user interface in accordance with the *user interface rendering data*." The Examiner cited Fig. 4 and claim 27 of

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Matsumoto as disclosing this last clause of claim 1. Fig. 4 of Matsumoto refers to interface information that is provided between a port controller and a disk controller. The information depicted in Fig. 4 includes port A transfer instruction information, port A host request information, port B transfer instruction information, and port B host request information. As further depicted in Fig. 4, the port A transfer instruction information contains a port ID, a command, and cache ADR information. As explained in ¶ [0043] of Matsumoto, the interface information depicted in Fig. 4 is used "for transferring data between the port controller 100/200 and the disk array controller 300." As further explained in ¶ [0044] of Matsumoto, when an I/O request is received from a host, the port A controller sets the port A host request information 420 (depicted in Fig. 4) to notify the disk array controller 300 of the I/O request. Thus, it is clear from Matsumoto that the interface information of Fig. 4 is to provide command information to perform an I/O request. There is nothing in Fig. 4 to even remotely hint at a user interface module *outputting* the drive information via a *user interface* in accordance with the *user interface rendering data*.

Claim 27 of Matsumoto, also cited by the Examiner, refers to a disk controller further comprising an interface apparatus having a user interface to indicate a backup task. The interface apparatus having the user interface recited in claim 27 appears to refer to ¶ [0075] of Matsumoto, which describes a user at a personal computer/workstation being able to request the disk array controller to start backup processing. However, there is no teaching ¶ [0075] or in claim 27 of Matsumoto of a user interface module *outputting drive information* via a user interface in accordance with the *user interface rendering data*.

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In view of the foregoing, it is clear that the subject matter of claim 18 is adequately supported by the Specification, and therefore, the written description requirement of § 112, ¶ 1 is satisfied.

Claim 21 was rejected under § 112, ¶ 1, because the Examiner asserted that the element “drawing of a graphical image” is new matter not previously disclosed. Fig. 3 of the Specification shows a graphical user interface that contains various graphical images. Paragraph [0033] of the Specification indicates that drive information is output in accordance with user interface rendering data, where the drive information may be displayed in a graphical user interface. Paragraph [0033] also notes that the user interface module may include a multimedia presentation including audio and visual output.

Therefore, ample support exists for the clause “drawing of a graphical image” recited in claim 21. The written description requirement of § 112, ¶ 1 has been satisfied with respect to claim 21.

In view of the foregoing, reversal of the § 112, ¶ 1 rejection of the above claims is respectfully requested.

B. Claims 11-15, 17, 18, 20, 24, and 25 Rejected Under 35 U.S.C. § 112, ¶ 2.

1. Claims 11-15, 17, and 25.

Claim 11 was rejected under § 112, ¶ 2 as being indefinite in view of the following language: “receiving the drive information in graphical user interface rendering data is in response to the indication of activation of the button.” The Examiner argued that “[t]his is confusing.” 5/16/2007 Office Action at 3. The Examiner made the following assertion: “Receiving is in response to the indication is not making sense, is the information being received in response to activation? Clarify.”

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In the Response to Arguments section of the 5/16/2007 Office Action, the Examiner made the following assertion: "In response to applicant's arguments that the Matsumoto [sic] does not teach user interface rendering data, examiner disagrees." 5/16/2007 Office Action at 11. The Examiner has incompletely summarized Appellant's arguments. The specific argument made by Appellant is that Matsumoto does not disclose a user interface module outputting the drive information via a user interface in accordance with the *user interface rendering data*. A user interface to indicate a backup task, as recited in claim 27 of Matsumoto, simply does not provide any teaching of the subject matter of claim 1.

In view of the foregoing, it is clear that claim 1 and its dependent claims are not anticipated by Matsumoto. Therefore, reversal of the final rejection of the above claims is respectfully requested.

2. Claim 4.

Claim 4 depends from claim 1 and is therefore allowable for at least the same reasons as claim 1.

Moreover, claim 4 recites that the drive controller retrieves updated drive information if a data access drive changes state. Again, the Examiner cited claim 27 of Matsumoto as disclosing this feature of claim 4. Claim 27 of Matsumoto recites a user interface to indicate a backup task. There is no teaching in this passage of Matsumoto of a drive controller retrieving updated drive information if a data access drive changes state. Therefore, claim 4 is further allowable for the foregoing reason.

Reversal of the final rejection of the above claim is respectfully requested.

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3. Claim 8.

Claim 8 depends from claim 1 and is allowable for at least the same reasons as claim 1. Moreover, claim 8 recites that the drive information and the user interface rendering data is displayed in a graphical user interface. The Examiner argued that a graphical user interface is "inherent" in claim 27 of Matsumoto. 5/16/2007 Office Action at 5. Appellant respectfully disagrees. "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." M.P.E.P. § 2112 (8th ed., Rev. 5), at 2100-47. To establish inherency, "the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Id.*, at 2100-48.

The Examiner clearly has not provided any basis in fact and/or technical reasoning regarding why a graphical user interface as recited in claim 8 is necessarily present in claim 27 of Matsumoto. Claim 27 of Matsumoto merely refers to a user interface to indicate a backup task – there clearly is no teaching of a *graphical* user interface in Matsumoto.

Claim 8 is further allowable for the foregoing reasons. Reversal of the final rejection of the above claim is respectfully requested.

D. Claims 11, 12, 14, 15, 17, 18, 20, and 25 Rejected Under 35 U.S.C. § 102 Over U.S. Patent Application Publication No. 2003/0169297 (Lay).

1. Claims 11, 12, 14, 17, and 25.

Independent claim 11 was rejected as being anticipated by Lay. Appellant respectfully disagrees, as Lay fails to disclose each and every element of claim 11.

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Note that claim 11 recites receiving drive information and graphical user interface rendering data generated by a *drive controller* at a *data access drive of a storage system*, and performing other tasks as recited in claim 11.

In contrast, Lay describes a system to display a first indicator to show that a printer is currently warmed up and ready to print, and to display a second indicator to indicate that the printer is not yet warmed up and ready to print. Lay, ¶ [0015]. The Abstract of Lay states that a first indicator is displayed to indicate that a specified output device is warmed up and ready to *print*, while a second indicator is displayed to the user when the output device is not warmed up and ready to *print*.

The indicator relating to whether the printer of Lay is ready or not to print has nothing to do with the subject matter of claim 11, which recites receiving *drive* information and graphical user interface rendering data generated by a drive controller *at a data access drive of a storage system*. According to claim 11, the drive information is generated by a drive controller at a data access drive of a storage system, and this drive information is output in a GUI. Moreover, claim 11 recites receiving an indication of activation of a button that is a request for the *drive information*, where receiving the drive information and the graphical user interface rendering data is in response to the indication of activation of the button.

The teachings of Lay have nothing to do with the claimed subject matter.

Therefore, claim 11 and its dependent claims are not anticipated by Lay. Reversal of the final rejection of the above claims is respectfully requested.

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2. Claim 15.

Claim 15 depends from claim 11 and is thus allowable for at least the same reasons.

Moreover, claim 15 recites determining the drive state of a data access drive, where the drive information includes the drive state. With respect to claim 15, the Examiner cited the Abstract of Lay, and specifically to "displays 'warmed up' for example." The warmed up status of the *printer* of Lay has nothing to do with the drive state of a data access drive recited in claim 15.

Claim 15 is therefore further allowable for the foregoing reasons. Reversal of the final rejection of the above claim is respectfully requested.

3. Claims 18 and 20.

Claim 18 recites receiving activation of a button in the graphical user interface, where activation of the button is a request for *drive* information of a *data access device* in the automated storage system. Claim 18 further recites additional information regarding processing of the *drive* information of the *data access device* in the automated storage system.

In contrast, the indicators of Lay are indicators of whether or not a *printer* is ready to print. Therefore, Lay has nothing to do with the claimed invention.

Claim 18 and its dependent claims are therefore not anticipated by Lay. Reversal of the final rejection of the above claims is respectfully requested.

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E. Claim 13 Rejected Under 35 U.S.C. § 103 Over Lay in View of Matsumoto.

1. Claim 13.

In view of the defective rejection of base claim 11 over Lay, it is respectfully submitted that the obviousness rejection of dependent claim 13 over Lay and Matsumoto is also defective. Therefore, reversal of the final rejection of the above claim is respectfully requested.

F. Claims 21 and 24 Rejected Under 35 U.S.C. § 103 Over Matsumoto in View of Lay.

1. Claims 21 and 24.

In view of the defective rejection of base claim 1 over Matsumoto, it is respectfully submitted that the obviousness rejection of dependent claims 21 and 24 over Matsumoto and Lay is also defective.

Therefore, reversal of the final rejection of the above claims is respectfully requested.

G. Claims 22 and 23 Rejected Under 35 U.S.C. § 103 Over Matsumoto in View of JP 2002-149315 (Seki).

1. Claims 22 and 23.

In view of the defective rejection of base claim 1 over Matsumoto, it is respectfully submitted that the obviousness rejection of claims 22 and 23 over Matsumoto and Seki is also defective.

Moreover, a *prima facie* case of obviousness has not been established with to claims 22 and 23 for at least the additional reason that the hypothetical combination of Matsumoto and Seki does not disclose or hint at at least the following claim element: the drive information comprising status of the data access drive and operating speed of the data access drive.

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In the English Abstract of Seki, reference is made to an input speed that is fed back and displayed in an information display part. However, there is no indication that the input speed refers to the operating speed of a data access drive. Therefore, even if Matsumoto and Seki can be properly combined, the hypothetical combination of references fails to disclose or hint at all elements of the claims. Therefore, claims 22 and 23 are non-obvious over Matsumoto and Seki.

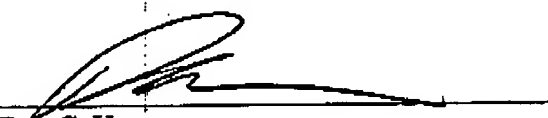
Reversal of the final rejection of the above claims is respectfully requested.

CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

Date: Aug 16, 2007


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VIII. APPENDIX OF APPEALED CLAIMS

The claims on appeal are:

- 1 1. An automated storage system comprising:
2 a data access drive operable to read and write computer-readable data on storage media;
3 a drive controller provided at the data access drive;
4 computer-readable program code provided in computer-readable storage at the data
5 access drive, the computer-readable program code for generating drive information and user
6 interface rendering data; and
7 a user interface module outputting the drive information via a user interface in
8 accordance with the user interface rendering data.
- 1 2. The system of claim 1 wherein the computer-readable program code includes a render
2 engine to generate the user interface rendering data.
- 1 3. The system of claim 1 wherein the computer-readable program code includes a state
2 machine to retrieve the drive information.
- 1 4. The system of claim 1 wherein the drive controller retrieves updated drive information if
2 a data access drive changes state.
- 1 5. The system of claim 1 further comprising a communication path established between the
2 drive controller and the user interface module, the drive information and the user interface
3 rendering data provided to the user interface module via the communication path.
- 1 6. The system of claim 5 wherein the communication path is established separate from a
2 data path with the drive controller.

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1 7. The system of claim 1 further comprising a communication path established between the
2 drive controller and a system controller and between the system controller and the user interface
3 module, the drive information and the user interface rendering data provided to the user interface
4 module via the communication path.

1 8. The system of claim 1 wherein the drive information and the user interface rendering data
2 is displayed in a graphical user interface.

1 9. The system of claim 1 wherein the drive controller retrieves updated drive information
2 based at least in part on input from the user interface module.

1 10. The system of claim 1 wherein the drive controller receives control instructions from the
2 user interface module.

1 11. A method executed by a processor, comprising:
2 receiving drive information and graphical user interface rendering data generated by a
3 drive controller at a data access drive of a storage system;
4 outputting the drive information in a graphical user interface in accordance with the
5 graphical user interface rendering data; and
6 receiving an indication of activation of a button in the graphical user interface, wherein
7 activation of the button is a request for the drive information, and wherein receiving the drive
8 information and graphical user interface rendering data is in response to the indication of
9 activation of the button.

1 12. The method of claim 11 wherein receiving the drive information and the graphical user
2 interface rendering data is via a system controller.

1 13. The method of claim 11 wherein receiving the drive information and graphical user
2 interface rendering data is via a separate communications path.

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1 14. The method of claim 11, wherein outputting the drive information comprises displaying
2 the drive information in the graphical user interface in accordance with the graphical user
3 interface rendering data.

1 15. The method of claim 11 further comprising determining the drive state of a data access
2 drive, the drive information including the drive state.

1 17. The method of claim 11 further comprising:
2 receiving a second indication of activation of the button in the graphical user interface;
3 and
4 outputting updated drive information in the graphical user interface in response to
5 receiving the second indication.

1 18. In an automated storage system having a graphical user interface including a display and
2 a user interface selection device, a method of providing and selecting from the display
3 comprising:

4 receiving activation of a button in the graphical user interface, wherein activation of the
5 button is a request for drive information of a data access device in the automated storage system;
6 and

7 sending an indication regarding the activation of the button to a drive controller at the
8 data access drive;

9 responsive to the indication regarding the activation of the button, receiving drive
10 information and graphical user interface rendering data from the drive controller; and

11 displaying the drive information in an application window in the graphical user interface
12 in accordance with the graphical user interface rendering data.

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1 20. The method of claim 18, further comprising:
2 receiving a second activation of the button;
3 sending a second indication regarding the second activation of the button to the drive
4 controller; and
5 receiving updated drive information that represents a state change of the data access
6 drive, and corresponding updated graphical user interface rendering data from the drive
7 controller; and
8 displaying the updated drive information in the application window in accordance with
9 the updated graphical user interface rendering data.

1 21. The system of claim 1, wherein the user interface rendering data enables drawing of a
2 graphical image in the user interface.

1 22. The system of claim 1, wherein the drive information generated by the computer-readable
2 program code comprises a status of the data access drive and operating speed of the data access
3 drive.

1 23. The system of claim 22, wherein the drive information further comprises an error rate of
2 the data access drive.

1 24. The system of claim 1, wherein the user interface comprises a graphical user interface,
2 wherein the user interface rendering data comprises a graphical user interface rendering data, and
3 wherein the user interface module displays the drive information in a window of the graphical
4 user interface in accordance with the graphical user interface data.

1 25. The method of claim 11, further comprising sending output regarding activation of the
2 button to the drive controller, wherein the drive information and graphical user interface
3 rendering data is generated by the drive controller in response to the output.

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IX. EVIDENCE APPENDIX

None.

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X. RELATED PROCEEDINGS APPENDIX

None.